

AMENDMENTS TO THE CLAIMS

This list of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1. (Currently Amended) A fuel cell comprising:
a first metal bipolar plate including flow channels;
a second metal bipolar plate including flow channels; and
a membrane formed between the first and second bipolar plates, wherein the first and second bipolar plates are extruded bipolar plates where the flow channels are formed by an extrusion process.
2. (Original) The fuel cell according to claim 1 wherein the flow channels in the first and second bipolar plates are selected from the group consisting of square, rectangular, trapezoidal, round, sinusoidal and elliptical shaped flow channels.
3. (Original) The fuel cell according to claim 1 wherein the flow channels include flow channels for a cooling fluid.
4. (Original) The fuel cell according to claim 3 wherein the flow channels extend through a middle portion of the first and second bipolar plates.
5. (Original) The fuel cell according to claim 1 wherein the flow channels include anode flow channels and cathode flow channels.
6. (Original) The fuel cell according to claim 5 wherein the anode and cathode flow channels are provided at outside edges of the first and second bipolar plates.
7. (Original) The fuel cell according to claim 1 wherein the first and second bipolar plates include recessed edges.

8. (Original) The fuel cell according to claim 7 further comprising end plates positioned in the recessed edges for securing the first and second bipolar plates together.

9. (Original) The fuel cell according to claim 1 wherein the first and second bipolar plates are extruded aluminum plates.

10. (Original) The fuel cell according to claim 1 wherein the fuel cell is for an automotive application.

11. (Currently Amended) A metal bipolar plate for a fuel cell, said metal bipolar plate comprising a series of flow channels extending through the plate, said bipolar plate being an extruded bipolar plate where the flow channels are formed by an extrusion process.

12. (Original) The bipolar plate according to claim 11 wherein the flow channels are selected from the group consisting of square, rectangular, trapezoidal, round, sinusoidal and elliptical shaped flow channels.

13. (Original) The bipolar plate according to claim 11 wherein the flow channels include flow channels for a cooling fluid.

14. (Original) The bipolar plate according to claim 11 wherein the flow channels include anode flow channels and cathode flow channels.

15. (Original) The bipolar plate according to claim 11 wherein the flow channels extend through a middle portion of the plate.

16. (Original) The bipolar plate according to claim 11 wherein the flow channels are provided at outside edges of the plate.

17. (Original) The bipolar plate according to claim 11 further comprising recessed edges.

18. (Original) The bipolar plate according to claim 11 wherein the plate is an extruded aluminum plate.

19 – 21. Cancelled.

22. (New) A fuel cell comprising:

an anode side metal bipolar plate, said anode side metal bipolar plate being an extruded bipolar plate, said anode side bipolar plate including anode side flow channels at one side of the anode side metal bipolar plate for the fuel cell, cathode side flow channels at an opposite side of the anode side metal bipolar plate for an adjacent fuel cell and cooling fluid flow channels extending through a middle portion of the anode side bipolar plate, said anode side metal bipolar plate further including a recess at each end of the anode side metal bipolar plate;

a cathode side metal bipolar plate, said cathode side metal bipolar plate being an extruded bipolar plate, said cathode side bipolar plate including cathode side flow channels at one side of the cathode side metal bipolar plate for the fuel cell, anode side flow channels at an opposite side of the cathode side bipolar plate for an adjacent fuel cell and cooling fluid flow channels extruding through a middle portion of the cathode side bipolar plate, said cathode side metal bipolar plate further including a recess at each end of the cathode side metal bipolar plate; and

a membrane positioned between the anode side bipolar plate and the cathode side bipolar plate.

23. (New) The fuel cell according to claim 22 wherein the cooling fluid flow channels in the anode side and cathode side bipolar plates are selected from the group consisting of square, rectangular, trapezoidal, round, sinusoidal and elliptical shaped flow channels.

24. (New) The fuel cell according to claim 22 further comprising end plates positioned in the recesses at the ends of the anode side and cathode side bipolar plates for securing the anode side and cathode side bipolar plates together.